TAYCHIPST

GENERAL PURPOSE RECTIFIERS

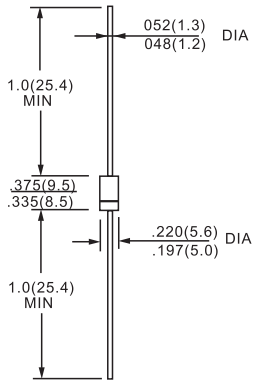
BY251 THRU BY255

200V-1300V 3.0A

FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current, I_R less than 0.1 μA
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

DO-27



Dimensions in inches and (millimeters)

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for both consumer and automotive applications.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

RATING	SYMBOL	BY251	BY252	BY253	BY254	BY255	UNIT
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	200	400	600	800	1300	V
Maximum RMS Voltage	V_{RMS}	140	280	420	560	910	V
Maximum DC Blocking Voltage	V_{DC}	200	400	600	800	1300	V
Maximum Average Forward Current 0.375"(9.5mm) Lead Length Ta = 50 °C	I_F	3.0					A
Peak Forward Surge Current 8.3ms Single half sine wave Superimposed on rated load (JEDEC Method)	I_{FSM}	100					A
Maximum Forward Voltage at I_F = 3.0 Amps.	V_F	1.1					V
Maximum DC Reverse Current Ta = 25 °C	I_R	20					μA
at rated DC Blocking Voltage Ta = 100 °C	$I_{R(H)}$	50					μA
Typical Junction Capacitance (Note1)	C_J	50					pF
Typical Thermal Resistance (Note2)	RθJA	18					°C/W
Junction Temperature Range	T_J	- 65 to + 175					°C
Storage Temperature Range	T_{STG}	- 65 to + 175					°C

Notes :

(1) Measured at 1.0 MHz and applied reverse voltage of 4.0V_{DC}

(2) Thermal resistance from Junction to Ambient at 0.375" (9.5mm) Lead Lengths, P.C. Board Mounted.

FIG.1 -- TYPICAL FORWARD CHARACTERISTICS

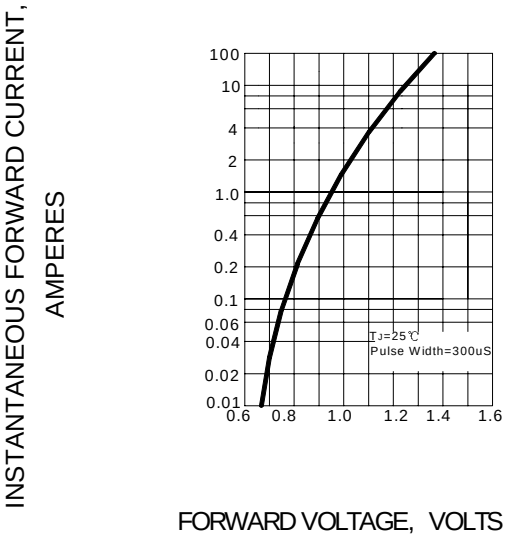
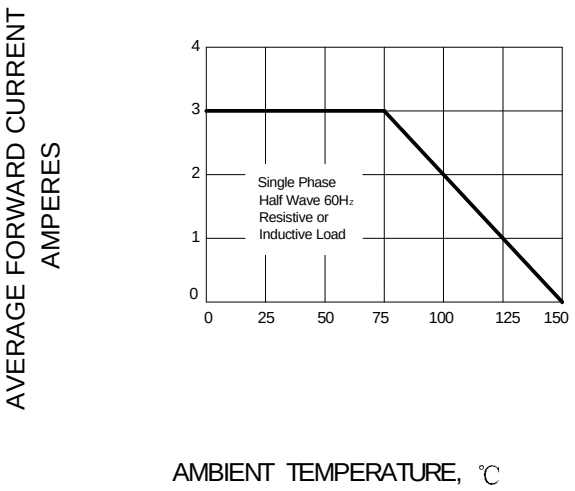


FIG.2 -- TYPICAL CURRENT DERATING CURVE



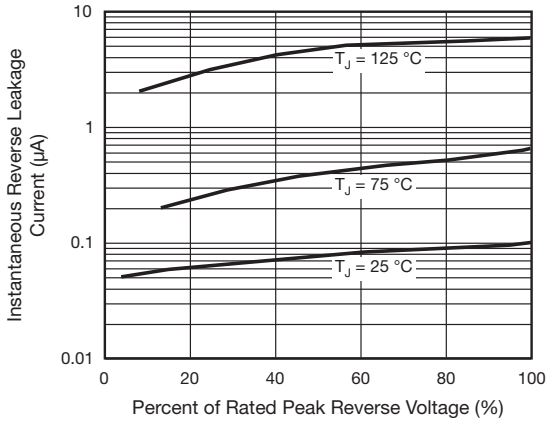


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

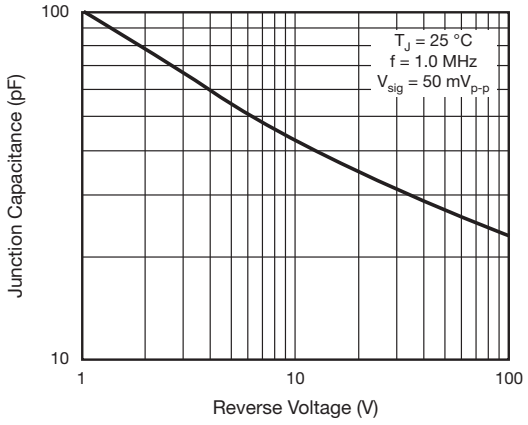


Fig. 5 - Typical Junction Capacitance

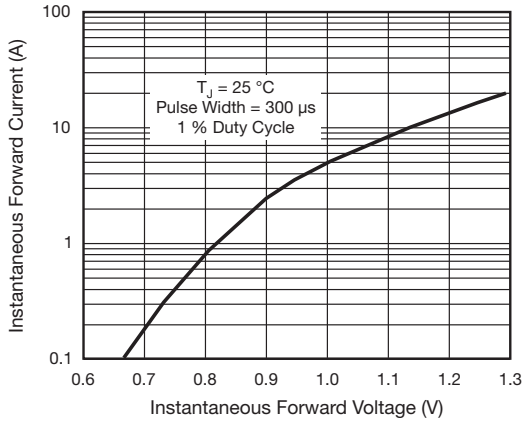


Fig. 4 - Typical Instantaneous Forward Characteristics